

REMARKS

In the Office Action of November 8, 2002, Claims 8, 10 - 12, and 15 were rejected. Claim 14 was allowed. In response, Claims 8, 10 and 12 are amended, and new Claim 16 is added to the application. Reexamination and reconsideration are respectfully requested in view of the foregoing amendments and the following remarks.

Rejection of Claims 10 - 11 and 15 under 35 U.S.C. §112, first paragraph

Claims 10, 11 and 15 were rejected under 35 U.S.C. §112, first paragraph, on the alleged grounds that the specification, while being enabling for mutagens of the genus *Escherichia*, does not reasonably provide enablement for the broad claimed "microorganism".

In response, independent Claim 10 is amended to specify that the microorganism of the invention is obtained by a mutation treatment. In particular, the amended Claim 10 specifies that the microorganism belonging to the genus *Escherichia* having an ability to produce an L-amino acid and having resistance to a DNA gyrase inhibitor and to an aminoquinoline derivative is obtained by a mutation treatment. Thus, the amended claim conforms to what the Examiner has indicated is enabled by the specification. Accordingly, it is respectfully submitted that the rejection under 35 U.S.C. §112, first paragraph, is thereby overcome.

Rejection of Claims 8 - 9, 12, 13 and 15 under 35 U.S.C. §102(b)

Claims 8 - 9, 12, 13 and 15 are rejected under 35 U.S.C. §102(b) as

anticipated by Ivanisevic et al and Filtowcz. The Examiner alleges that each of the references anticipates the claimed microorganism(s) absent a showing to the contrary since *Escherichia* microorganisms are allegedly known to produce L-amino acids and that the references teach the same resistances.

This rejection is traversed as it may apply to Claims 8 and 12 as amended and to Claim 15. (Note that Claims 9 and 13 were canceled in a previous response.)

Regarding Claim 15, the Examiner is requested to note that this claim depends from Claim 10, which was not rejected under 35 U.S.C. §102(b). Application of the instant rejection to Claim 15, therefore, is clearly in error. Accordingly, withdrawal of the rejection with respect to Claim 15 is respectfully requested.

Regarding Claim 12, this claim is amended to provide that the microorganism has resistance to a DNA gyrase inhibitor and an aminoquinoline derivative. Thus, the amended Claim 12 now contains limitations that are similar to those in Claim 10, which is not rejected under 35 U.S.C. §102(b). Accordingly, it is respectfully submitted that the rejection under 35 U.S.C. §102(b) is thereby overcome with respect to Claim 12.

Regarding Claim 8, this claim is amended to recite that the microorganism belonging to the genus *Escherichia* and having resistance to 1 g/l novobiocin has the ability to produce 15.7 g/l or more of L-histidine. This limitation is supported in the specification in Table 2 on page 13, which shows that the two mutant strains H-9342 and H9343 produced L-histidine in the amount of 15.7 g/l and 16.5 g/l respectively.

Accordingly, the microorganisms of the present invention are clearly

distinguished from those of Ivanisevic. The microorganisms studied in Ivanisevic, and listed in Table 1, page 1767 of the reference, are all derived from *Escherichia coli* K-12, which is a well known and widely used standard laboratory strain. Since *Escherichia coli* K-12 is a wild-type strain, the amount of L-histidine produced by *Escherichia coli* K-12 is trace. Even if *Escherichia coli* K-12 were to be endowed with resistance to 1g/l novobiocin, it is impossible that the productivity of L-histidine would be increased by two times as that of the parent strain. Accordingly, the amount of L-histidine produced by *Escherichia coli* K-12 that is resistant to 1g/1 novobiocin cannot be higher than 15.7g/l. As an example, as shown in Table 2 of the present specification, the productivity of L-histidine of *Escherichia coli* H-9342 is 15.7g/l, and the productivity of L-histidine of *Escherichia coli* H-9340 (the parent strain of *Escherichia coli* H-9342) is 13.0 g/l. That is, the productivity of L-histidine of *Escherichia coli* H-9342 is increased 1.2 fold by endowing *Escherichia coli* H-9340 with resistance to 1g/l novobiocin.

Further, in Table I of Ivanisevic, the genotypes of the strains used are shown for each of the listed microorganisms. As shown therein, no genotype that contributes to increase the productivity of L-histidine is shown. Although "hisG4" is shown as one of the genotypes of *Escherichia coli* AB1157, "hisG4" of *Escherichia coli* AB1157 means that the strain is a histidine auxotroph. That is, *Escherichia coli* AB1157 cannot produce histidine.

Therefore, any of the *Escherichia coli* strains listed in Table 1 of the reference, *Escherichia coli* C600, *Escherichia coli* MC4100, *Escherichia coli* AB1157, *Escherichia coli* SY209, *Escherichia coli* SY353, *Escherichia coli* SY426,

Escherichia coli SY427, *Escherichia coli* SY453, *Escherichia coli* SY454, *Escherichia coli* SY455, *Escherichia coli* SY457, *Escherichia coli* SY458, *Escherichia coli* SY459 and *Escherichia coli* SY460, cannot produce L-histidine in the amount of 15.7 g/l or greater as recited in Claim 8. Therefore, the microorganisms disclosed by Ivanisevic are clearly different from the microorganism of the present invention.

Likewise, The microorganisms recited by Filutowicz are all derived from *Escherichia coli* K-12, as shown in Table 1, page 302 of the reference. As discussed above with respect to Ivanisevic, even if *Escherichia coli* K-12 were endowed with resistance to 1g/l novobiocin, the obtained strain cannot produce 15.7g/l of L-histidine. Further, although the genotypes of the microorganisms are shown in Table 1, no genotype that contributes to increase the productivity of L-histidine is shown in Table 1. Thus, cannot produce L-histidine in the amount of 15.7 g/l or greater as recited in Claim 8. Therefore, the microorganisms disclosed by Filutowicz are clearly different from the microorganism of the present invention.

Accordingly, it is respectfully submitted that Claims 8, 12 and 15 are not anticipated by and would not have been obvious over Ivanisevic or Filtowcz, alone or in combination.

Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that Claims 8, 10 - 12 and 14 - 16 are in condition for allowance. Favorable reconsideration is respectfully requested.

Should the Examiner believe that anything further is necessary to place this application in condition for allowance, the Examiner is requested to contact applicants' undersigned attorney at the telephone number listed below.

Kindly charge any additional fees due, or credit overpayment of fees, to Deposit Account No. 01-2135 (506.39083VX1).

Respectfully submitted,
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IN THE CLAIMS

8. (twice amended) A microorganism belonging to the genus *Escherichia*, and having an ability to produce an L-amino acid 15.7 g/l or more L-histidine and having resistance to 1 g/l novobiocin.

10. (twice amended) A microorganism belonging to the genus *Escherichia*, and having an ability to produce and L-amino acid, ~~wherein the microorganism has~~ and having resistance to a DNA gyrase inhibitor and to an aminoquinoline derivative, wherein the microorganism is obtained by subjecting a microorganism having an ability to produce an L-amino acid to a mutation treatment.

12. (twice amended) The A microorganism according to claim 8 or 10 belonging to the genus *Escherichia*, having an ability to produce wherein the L-amino acid is L-histidine, and having resistance to a DNA gyrase inhibitor and an aminoquinoline derivative.